

Amendments to the Drawings:

The attached sheets of drawings includes four sheets containing copies of Fig. 3, 4, 5 and 6. These sheets, which includes clearer images of Fig. 4, 5, and 6 replaces the original sheets including Fig. 3, 4, 5, and 6.

The additional attached sheet of drawings includes introduction of new Fig. 8. This sheet is to be entered as an original sheet including Fig. 8.

Attachment: Replacement Sheets containing Fig. 3, 4, 5, and 6
New Sheet containing Fig. 8

REMARKS/ARGUMENTS

The specification has been revised to correspond to the introduction of Figure 8, which depicts subject matter as requested by the Examiner. Accordingly, the Figures have been revised by the addition of Figure 8.

The abstract has been revised without changing the intended description of the subject matter of the instant application.

Claim 56 has been revised to include the feature of aerogel material “in a blanket form”, which is supported at least on page 15, lines 28-29, of the instant application. Claim 56 has also been revised to recite “metallic”, which is supported at least on page 12, lines 21-22, of the instant application. Claim 59, 74, and 77-79 have been revised to correct clerical errors and oversights.

Claims 1-2, 5, 6, 10, 32, 35-38, 42-46, 51, and 53-55 have been revised to depend from claim 56. Claims 4, 7-9, 12, 13, 33, and 34 have been canceled without prejudice for re-presentation of the subject matter contained therein in a continuing application.

The revisions to the claims are not made in acquiescence to any alleged rejection, but rather to better tailor the claims to currently contemplated commercial embodiments of the invention. The revision is thus made for business reasons rather than reasons related to patentability.

No new matter has been introduced, and entry of the revised claims is respectfully requested.

Interview Summary

Applicants thank Examiner Mayo for the courtesy of an in-person interview on July 12, 2006 with Poongunran Muthukumaran, a representative of the assignee (Aspen Aerogels, Inc.) and the undersigned. During the interview, Ex. Mayo confirmed to Applicants' representatives that a new drawing depicting the subject matter of claims 73 and 75 may be

submitted without unnecessary concern regarding the introduction of new matter. A discussion of possible claim revisions to obviate the alleged issues of indefiniteness followed.

Applicants' representatives also discussed the nature of the claimed subject matter, including the need for recognition of the physical strains involved when a pipe-in-pipe apparatus is rolled up along its length. Additionally, the representatives directed the Examiners' attention to differences between the claimed subject matter and that of the cited references. Applicants' representatives agreed to include the differences in a written response.

Restriction Requirement

As presented above, claims 1-2, 5, 6, 10, 32, 35-38, 42-46, 51, and 53-55 have been revised to depend from claim 56. Accordingly, claims 1-3, 5, 6, 10, 11, 14, 32, 35-39, 42-46, and 51-55 all depend from, and so include the features of, claim 56.

In light of this relationship, Applicants respectfully point out the standards for rejoinder as set forth at MPEP 821.04. Applicants respectfully point out that claims 1-3, 5, 6, 10, 11, 14, 32, 35-39, 42-46, and 51-55 are subject to those rejoinder rules. Applicants respectfully request that the Examiner apply the rejoinder rules to these claims upon determination of claim 56 as allowable.

Drawings

The drawings were objected to as allegedly failing to depict the features of claims 73 and 75. As described above, a new Figure 8 has been introduced to depict these features as recited in the claims. Applicants believe this obviates the objection, which may be properly withdrawn.

Figures 4 through 6 were objected to as being of poor quality. Applicants have submitted new Figures 4, 5, and 6 of improved quality. Applicants believe this obviates the objection, which may be properly withdrawn.

Specification/Abstract

The abstract was objected to as allegedly containing language “that can be implied and refers to speculative applications.” Applicants have revised the abstract as presented above in light of the Examiner’s comments in the objection. The revisions are believed to obviate the objection, which may be properly withdrawn.

Alleged Issue under 35 U.S.C. §112, Second Paragraph

Claims 59, 74, and 77-79 were rejected under 35 U.S.C. §112, second paragraph as allegedly indefinite for reciting various phrases. Applicants have reviewed the text of the claims and have identified and corrected clerical errors and oversights to obviate this rejection.

In light of the claim revisions, Applicants respectfully submit that this rejection may be withdrawn.

Alleged Issues under 35 U.S.C. §103(a)

Claims 56-68, 70-72, 76, and 80-83 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable in light of Roberts, Jr. (USP 4,037,626) and Frank et al. (USP 6,887,563). Applicants have carefully reviewed the statement of the rejection as well as the cited references and respectfully traverse because no *prima facie* case of obviousness has been presented.

It is well settled that among the requirements of a *prima facie* case of obviousness is the requirement is that all features of the claimed invention must be disclosed or suggested by the cited references (see MPEP 2143.03 and the case decisions cited therein). Applicants respectfully submit that at least this requirement have not been met, and so no *prima facie* case is present.

Applicants respectfully point out that contrary to the statement of rejection, Frank et al. **do not** disclose an aerogel “in the form of a blanket” (col. 6, lines 15 through 19) as asserted on page 8 of the Office Action mailed June 15, 2006. That portion of Frank et al. states as follows:

“If the material is used *in the form of flat structures such as panels or mats*, these can be covered on at least one side with at least one covering layer in order to improve its surface properties, and to make it more

robust, form it as a vapour barrier, or protect it against soiling. These covering...” (emphasis added).

As shown by the above quote, Frank et al. do not disclose or suggest “aerogel material in blanket form” as featured in the claimed subject matter. To the contrary, they describe “flat structures such as panels or mats” which, at a minimum, differ from a “blanket”, which has at least the property of flexibility as a distinct feature. Moreover, Roberts, Jr. does not remedy this deficiency of Frank et al. Accordingly, at least the “blanket” feature of the claimed subject matter is not taught or suggested by the cited documents, and so no *prima facie* case of obviousness is present.

Additionally, neither Roberts, Jr. or Frank et al. teach or suggest a metallic flow pipe as featured in the claims.

In light of these deficiencies by Roberts, Jr. and Frank et al., Applicants respectfully submit that the rejection may be properly withdrawn.

Claims 56, 68 and 69 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable in light of Ziemek et al. (USP 4,570,678) and Frank et al. (USP 6,887,563). Applicants have carefully reviewed the statement of the rejection as well as the cited references and respectfully traverse because no *prima facie* case of obviousness has been presented.

It is well settled that among the requirements of a *prima facie* case of obviousness are the need for a suggestion or motivation to combine the cited references (see MPEP 2143.01 and the case decisions cited therein) and the lack of a “teaching away” from the combination (see MPEP 2145 X.D. and the case decisions cited therein). Another requirement is that all features of the claimed invention must be disclosed or suggested by the cited references (see MPEP 2143.03 and the case decisions cited therein). Applicants respectfully submit that at least these three requirements have not been met, and so no *prima facie* case is present.

With respect to the lack of a suggestion or motivation to combine the cited references, Applicants note that the instant statement of rejection asserts that motivation to modify the device of Ziemek et al. by inclusion of the aerogel of Frank et al. would have been

present “to provide the apparatus with an insulator having low thermal conductivity” (see page 10 of the Office Action mailed June 15, 2006).

Applicants respectfully point out, however, that Ziemek et al. describe “two concentrically arranged metal tubes spaced by means of a helical spacer with a vacuum prevailing between the two tubes, whereby particularly the *maintaining of the vacuum is a critical aspect*” (emphasis added, see column 1, lines 52-55). Ziemek et al. also describe a

“new and improved spacer for use in a concentric tube ... whereby particularly issuance and evaporation of any gas is to be avoided, i.e., the vacuum between the two concentric tubes is to be maintained, whereby particularly gas issue should be considerably *lower than achievable with a conventional synthetic material*” (emphasis added, see column 1, lines 56-64).

The spacer disclosed by Ziemek et al. comprise “intertwined strands of a ceramic material” (see column 1, line 65, to column 2, line 1) which “... is ‘cleaner’ from the point of view of vacuum technology because once installed and once the vacuum has been established, any residual gas will no longer emerge” (see column 3, lines 44-52).

Therefore, the express disclosure of Ziemek et al. is to “maintain a vacuum” and utilize a “clean” material that avoids issuance, evaporation, or emergence of gas therefrom when placed under vacuum. In light of this emphasis, and only for purposes of argument based upon available information and belief, a skilled person in the art at the time of the invention would only be motivated to substitute a “clean” material into the apparatus of Ziemek et al. But there is no disclosure of the aerogel of Frank et al. as such a “clean” material. For example, Frank et al. do not describe or suggest their aerogel as being “clean” when placed in a vacuum. Frank et al. also do not describe or suggest their aerogel as a material that avoids issuance, evaporation, or emergence of gas when in a vacuum.

Therefore, there is no motivation or suggestion to modify the vacuum-based system in the apparatus of Ziemek et al. with an aerogel of Frank et al. Stated differently, the

introduction of Frank et al.'s aerogel into the apparatus of Ziemek et al. provides no expectation of maintaining the "*critical aspect*" of a vacuum as expressly taught by Ziemek et al. because there is no teaching or suggestion that Frank et al.'s aerogel is a "clean" material as emphasized by Ziemek et al.

Moreover, Ziemek et al.'s express description of a vacuum as a "*critical aspect*" that requires the use of a "clean" material reflects a clear "teaching away" from the aerogel of Frank et al., which is not taught, suggested, or otherwise indicated or recognized as "clean". Stated differently, there is no teaching or suggestion that Frank et al.'s aerogel is anything other than a "conventional synthetic material" which Ziemek et al. describe as unsuited for their apparatus.

Therefore, and in light of the above, Applicants respectfully submit that no adequate motivation or suggestion to combine the cited references is present to support the instant rejection. Furthermore, the presence of an express "teaching away" from the aerogel of Frank et al. also shows the lack of a *prima facie* case. Accordingly, Applicants respectfully point out that this rejection may be properly withdrawn for either of these reasons alone, or the combination of these reasons.

Additionally, and like in the alleged rejection under 35 U.S.C. §103(a) addressed above, Applicants point out that Frank et al. **do not** disclose an aerogel "in the form of a blanket" for the reasons presented above. And in the instant rejection, Ziemek et al. do not remedy this deficiency of Frank et al. Accordingly, at least one feature of the claimed subject matter is not taught or suggested by the cited documents, and so no *prima facie* case of obviousness is present. In light of this deficiency in Frank et al., Applicants respectfully submit that the rejection may be properly withdrawn.

Claims 56, 73 and 75 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable in light of Marchal et al. (USP 6,568,431) and Frank et al. (USP 6,887,563). Applicants have carefully reviewed the statement of the rejection as well as the cited references and respectfully traverse because no *prima facie* case of obviousness has been presented.

Like the two previous alleged rejections under 35 U.S.C. §103(a), the instant rejection is based upon Frank et al., who **do not** disclose an aerogel “in the form of a blanket” for the reasons presented above. And in the instant rejection, Marchal et al. do not remedy this deficiency of Frank et al.

Accordingly, at least one feature present in claims 56, 73, and 75 is not taught or suggested by the cited documents, and so no *prima facie* case of obviousness is present. In light of this deficiency in the asserted combination of Marchal et al. and Frank et al., Applicants respectfully submit that the rejection may be properly withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6151.

Respectfully submitted,



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